

## Skin Abscess Caused by *Candida albicans*: Unusual Presentation of *C. albicans* Disease

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A 9-month-old patient developed a *Candida albicans* skin abscess at the repair site of a lumbar myelomeningocele. There was no evidence of *C. albicans* infection elsewhere in the body. The infection may have been acquired at the time of the original myelomeningocele repair at 2 days of age. The abscess was cured by surgical drainage and amphotericin B therapy. This case indicates that laboratories should be aware of *C. albicans* as an unusual cause of abscess.

*Candida albicans* is a well-known cause of superficial dermatitis, particularly in neonates. However, other types of skin infection are unusual (5). We report here a patient with a localized skin abscess due to *C. albicans* at the site of a myelomeningocele repair.

### CASE REPORT

The patient was born with a large lumbar myelomeningocele which was repaired surgically on the second day of life. A ventriculoperitoneal shunt was placed at 10 days of age for relief of moderate hydrocephalus. He recovered uneventfully from both operations and did well until 7.5 months of age when an erythematous, indurated lesion began to develop at the myelomeningocele repair site. On admission to The Henrietta Egleston Hospital for Children at 9 months of age, a tender erythematous lesion (5 by 5 cm) was present at the site of repair, but no other evidence of infection was found on physical examination.

Pus was aspirated from the mass on the day of admission and again the following day. Therapy with parenteral antibiotics was begun pending results of cultures. Both aspirates revealed occasional yeast forms and many leukocytes by Gram stain, and *C. albicans* was cultured from both specimens. When cultures for aerobic and anaerobic bacteria showed no growth, antibiotics were discontinued. The *C. albicans* isolate was inhibited by 1.56  $\mu$ g of amphotericin B per ml and killed by 3.12  $\mu$ g of amphotericin B per ml (kindly performed by A. Padhye, Center for Disease Control, Atlanta, Ga.). Multiple cultures of urine, blood, and cerebrospinal fluid were sterile. A technetium-99 bone scan, a gallium citrate scan, and serial roentgenograms of the lumbar spine showed no evidence of vertebral or paraspinal involvement by the infection. Because the lesion appeared to increase in size, amphotericin B (0.25 mg/kg) was begun on hospital day 3 and increased to 1 mg/kg per day by day 7. The lesion was incised surgically and drained on day 5. The culture obtained at the time of surgery grew *C. albicans*, but a repeat culture 2 days later was sterile. The patient had an uneventful recovery with healing of the wound by hospital day 15. Intravenous admin-

istration of amphotericin B was continued for 3 weeks, and no toxic effects associated with the drug were found. No evidence of recurrence of the *Candida* infection was observed 3 months after discharge.

Quantitative serum immunoglobulins and assays for B and T lymphocyte numbers (performed by Thomas Spira, Center for Disease Control, Atlanta, Ga.) were within the normal limits for age. A *Candida* skin test was reactive (8-mm erythema and induration).

### DISCUSSION

Abscesses are rare manifestations of *C. albicans* infection in contrast to the frequent association of dermatitis and mucous membrane infection with this yeast. In a review of 301 fungal isolations, Szilagyi and Reiss (3) recovered *C. albicans* from pus in one patient; however, no clinical details were reported. Similarly, Mazumdar and Marks (2) reported 74 patients with a variety of *C. albicans* infections; none of their patients had a skin abscess. Bernhardt et al. (1) described two adult patients with carcinoma of the cervix or diabetes mellitus who had *C. albicans* isolated from abscesses in the peritoneum and skin, respectively. Cultures of blood and urine were also positive in three patients, indicating disseminated infection in these patients. Tennant et al. (4) also reported on an 18-year-old black female with juvenile diabetes mellitus who had *C. albicans* isolated from skin abscesses and urine. Patients from previous reports differ from our case in that they had abscesses associated with disseminated infection or with underlying diseases such as diabetes mellitus or carcinoma or both. To our knowledge, this is the first well-documented report of *Candida* abscess in the absence of dissemination or underlying systemic disease.

The pathogenesis of the infection in this patient is unclear. Serial cultures of blood, urine, and cerebrospinal fluid and careful clinical examinations did not show evidence of infection at

other sites. There was also no evidence of extension of the infection from the site of the repair into the underlying lumbar spine. Although it is possible that the infection may have arisen from a primary fungemia which localized in the repair site, it seems unlikely that the patient would not have been also infected elsewhere. We speculate that the infection was localized at the site of repair, introduced either at the time of surgery or in the postoperative period.

Initially, the abscess was assumed to be bacterial in origin, but no bacteria were isolated in aerobic or anaerobic cultures on three different occasions, and there was no response to antibiotics. By contrast, pure growths of *C. albicans* were isolated from each culture. Even after the etiology had been established, amphotericin B was not begun until the lesion had increased in

size despite our removing pus by needle aspiration. Eventually, the infection responded to surgical drainage and antifungal therapy.

#### LITERATURE CITED

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